

# **AR-B104B\_4P/8P, PCI104 COM**

**RS232/RS485/ Full duplex with Isolation and ESD protect**

## **User Manual**

**Manual Rev.: 1.1**

**Book Number: AR-B104B 2010.10.18**

## Revision

Version	Date	Author	Description
0.1	2009/1/15	Marc Chung	Draft
0.2	2009/2/3	Judy Tseng	Revise
1.0	2009/2/4	Marc Chung	Release
1.1	2010/10/18	Kenny Lee	OXmPCI954 change to OXuPCI954

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Manual's first edition:

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# 1 Introduction

Welcome to the AR-B104B\_4P/8P PCI104 COM PORT. The AR-B104B\_4P/8P is the PCI 104 compliant that compatible with 16C550 performance UART channel and supports all RS-232C transceiver mode. Maximum baud rate is to 115.2Kbps in asynchronous mode.

The AR-B104B\_4P/8P is a Complete Platform that totally supports 4 UART channels(AR-B104B/4P), could option to 8 channel(AR-B104B/8P)

## 1.1 Specifications

- Module Name: AR-B104B/4P or 8P.
- Dimension: 90.2mm x 95.9mm.
- Controller: Oxford OXuPCI954.
- RS232: Isolation 2KV and ESD contact 8KV air 15KV protect.
- Function selectable: RS232/RS485/RS422 selectable by jumper
- System Interface: PCI Local bus specification V3.0 in PCI-104 format
- Connector: 2 x 22 2.0mm pin head 180 degree.
- Operation Temperature: AR-B104B/4P: -20°C to 85°C ; AR-B104B/8P: -20°C to 70°C.
- Support: OS Windows XP/XPE, Linux FC6/FC7.

## 1.2 Package Contents

Check if the following items are included in the package.

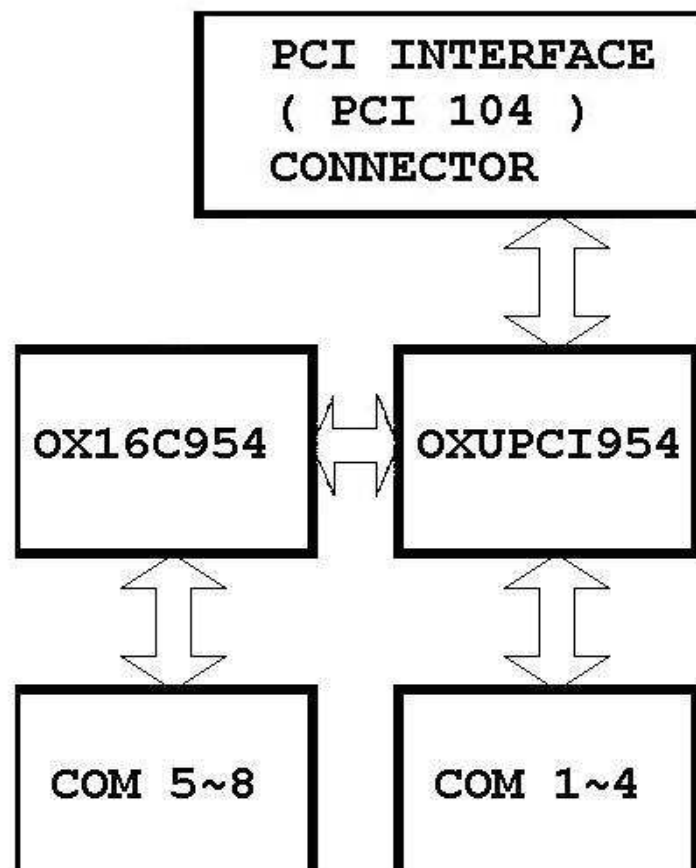
AR-B104B\_4P Packing List:

- AR-B104B\_4P
- 2.0mm 2x22 Pin header to 4 x DB9 cable
- 1 software utility CD
- Gift Box
- User Manual

AR-B104B\_8P Packing List:

- AR-B104B\_8P
- 2.0mm 2x22 Pin header to 4 x DB9 cable
- 2.0mm 2x22 Pin header to DB37 cable
- DB37 to 4 x DB9 cable
- 1 software utility CD
- Gift Box
- User Manual

### 1.3 Block Diagram

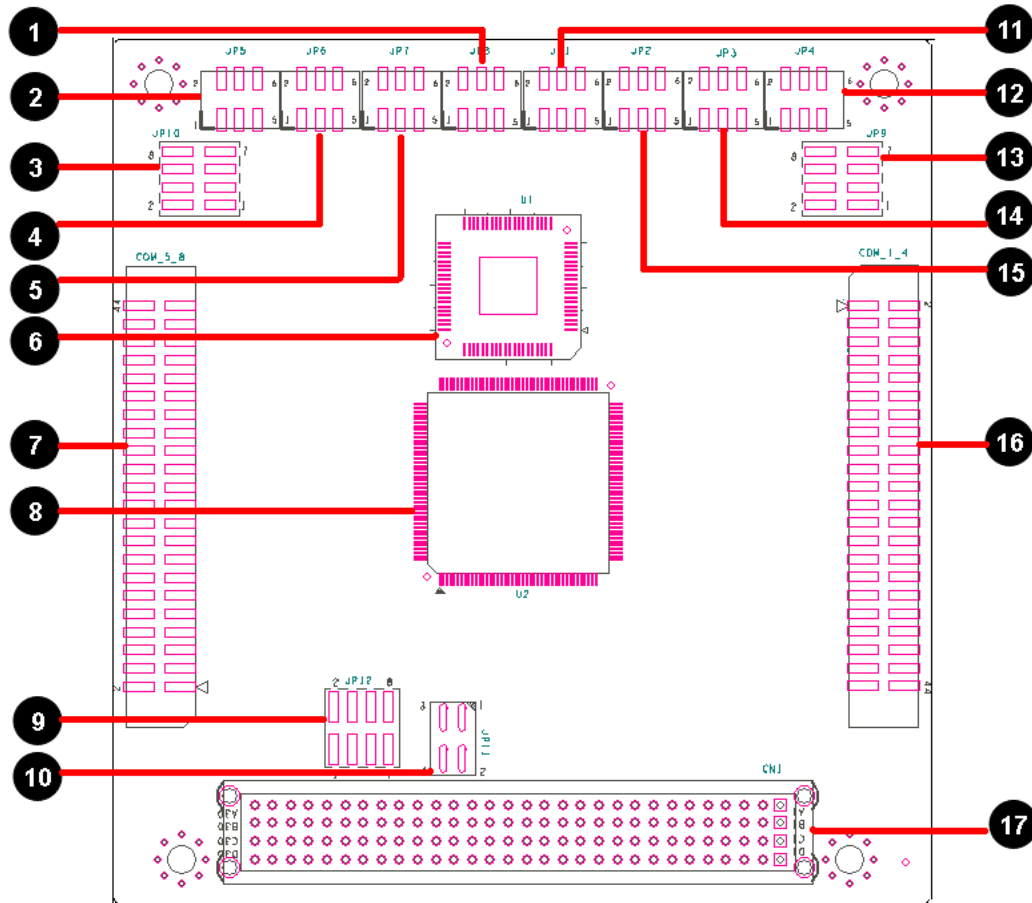




## 2 AR-B104B H/W Information






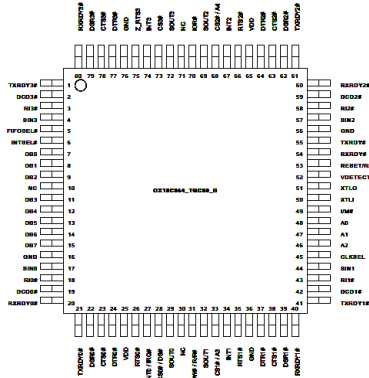
This chapter describes the installation of AR-B104B. At first, it shows the function diagram and the layout of AR-B104B. It then describes the unpacking information which you should read carefully, as well as the jumper/switch settings for the AR-B104B configuration.


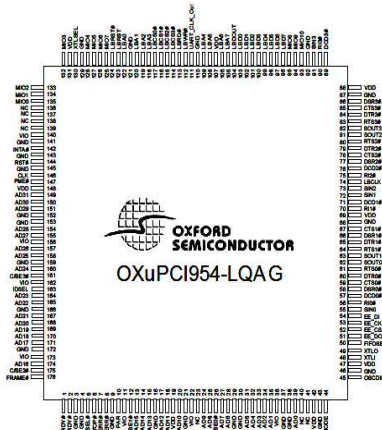
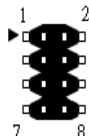
### 2.1 Connectors and Jumpers Setting

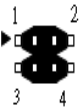



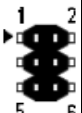





①	<b>JP8</b> COM8 transfer type select	⑩	<b>JP11</b> PCI Clock and IDSEL signal select
②	<b>JP5</b> COM5 transfer type select	⑪	<b>JP1</b> COM1 transfer type select
③	<b>JP10</b> COM5 ~ COM8 termination enable	⑫	<b>JP4</b> COM4 transfer type select
④	<b>JP6</b> COM6 transfer type select	⑬	<b>JP9</b> COM1 ~ COM4 termination enable
⑤	<b>JP7</b> COM7 transfer type select	⑭	<b>JP3</b> COM3 transfer type select
⑥	<b>UART Controller 1</b> OXuPCI954 for COM5 ~ COM8	⑮	<b>JP2</b> COM2 transfer type select
⑦	<b>COM 5~8</b> COM5 ~ COM8 output port	⑯	<b>COM 1~4</b> COM1 ~ COM4 output port
⑧	<b>UART Controller 2</b> OXuPCI954 for COM1 ~ COM4	⑰	<b>CN1</b> PCI 104 slot signal from M/B
⑨	<b>JP12</b> PCI INT signal select		

## 2.2 Connectors and Jumpers Pin Define

2.1 JP8 COM8 transfer type select		2.2 JP5 COM5 transfer type select		2.3 JP10 COM5 ~ COM8 termination enable																											
<div></div>	<table><thead><tr><th>Transfer type</th><th>Select</th></tr></thead><tbody><tr><td>RS-232</td><td>3 - 4 (default)</td></tr><tr><td>RS-422</td><td>1 - 2, 5 - 6</td></tr><tr><td>RS-485</td><td>1 - 2</td></tr></tbody></table> <div>(AR-B104B/8P Optional)</div>	Transfer type	Select	RS-232	3 - 4 (default)	RS-422	1 - 2, 5 - 6	RS-485	1 - 2	<div></div>	<table><thead><tr><th>Transfer type</th><th>Select</th></tr></thead><tbody><tr><td>RS-232</td><td>3 - 4 (default)</td></tr><tr><td>RS-422</td><td>1 - 2, 5 - 6</td></tr><tr><td>RS-485</td><td>1 - 2</td></tr></tbody></table> <div>(AR-B104B/8P Optional)</div>	Transfer type	Select	RS-232	3 - 4 (default)	RS-422	1 - 2, 5 - 6	RS-485	1 - 2	<div></div>	<table><thead><tr><th>120R termination enable</th><th>Select</th></tr></thead><tbody><tr><td>COM5 120R termination enable</td><td>1 - 2 (default)</td></tr><tr><td>COM6 120R termination enable</td><td>3 - 4 (default)</td></tr><tr><td>COM7 120R termination enable</td><td>5 - 6 (default)</td></tr><tr><td>COM8 120R termination enable</td><td>7 - 8 (default)</td></tr></tbody></table> <div>(AR-B104B/8P Optional)</div>	120R termination enable	Select	COM5 120R termination enable	1 - 2 (default)	COM6 120R termination enable	3 - 4 (default)	COM7 120R termination enable	5 - 6 (default)	COM8 120R termination enable	7 - 8 (default)
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	<table><tr><th>PCI INT and IDSEL signal select</th><th>Select</th></tr><tr><td>CLK0, IDSEL 0</td><td>1-2, 3-4 (default)</td></tr><tr><td>CLK1, IDSEL 1</td><td>1 - 2</td></tr><tr><td>CLK2, IDSEL 2</td><td>3 - 4</td></tr><tr><td>CLK2, IDSEL 3</td><td>N/A</td></tr></table>	PCI INT and IDSEL signal select	Select	CLK0, IDSEL 0	1-2, 3-4 (default)	CLK1, IDSEL 1	1 - 2	CLK2, IDSEL 2	3 - 4	CLK2, IDSEL 3	N/A		<table><tr><th>Transfer type</th><th>Select</th></tr><tr><td>RS-232</td><td>3 – 4 (default)</td></tr><tr><td>RS-422</td><td>1 – 2, 5 - 6</td></tr><tr><td>RS-485</td><td>1 - 2</td></tr></table>	Transfer type	Select	RS-232	3 – 4 (default)	RS-422	1 – 2, 5 - 6	RS-485	1 - 2		<table><tr><th>Transfer type</th><th>Select</th></tr><tr><td>RS-232</td><td>3 – 4 (default)</td></tr><tr><td>RS-422</td><td>1 – 2, 5 - 6</td></tr><tr><td>RS-485</td><td>1 - 2</td></tr></table>	Transfer type	Select	RS-232	3 – 4 (default)	RS-422	1 – 2, 5 - 6	RS-485	1 - 2
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RS-485	1 - 2																														
2.13 JP9 COM1 ~ COM4 termination enable		2.14 JP3 COM3 transfer type select		2.15 JP2 COM2 transfer type select																											
	<table><tr><th>120R Termination enable</th><th>Select</th></tr><tr><td>COM1 120R termination enable</td><td>1 – 2 (default)</td></tr><tr><td>COM2 120R termination enable</td><td>3 – 4 (default)</td></tr><tr><td>COM3 120R termination enable</td><td>5 – 6 (default)</td></tr><tr><td>COM4 120R termination enable</td><td>7 – 8 (default)</td></tr></table>	120R Termination enable	Select	COM1 120R termination enable	1 – 2 (default)	COM2 120R termination enable	3 – 4 (default)	COM3 120R termination enable	5 – 6 (default)	COM4 120R termination enable	7 – 8 (default)		<table><tr><th>Transfer type</th><th>Select</th></tr><tr><td>RS-232</td><td>3 – 4 (default)</td></tr><tr><td>RS-422</td><td>1 – 2, 5 - 6</td></tr><tr><td>RS-485</td><td>1 - 2</td></tr></table>	Transfer type	Select	RS-232	3 – 4 (default)	RS-422	1 – 2, 5 - 6	RS-485	1 - 2		<table><tr><th>Transfer type</th><th>Select</th></tr><tr><td>RS-232</td><td>3 – 4 (default)</td></tr><tr><td>RS-422</td><td>1 – 2, 5 - 6</td></tr><tr><td>RS-485</td><td>1 - 2</td></tr></table>	Transfer type	Select	RS-232	3 – 4 (default)	RS-422	1 – 2, 5 - 6	RS-485	1 - 2
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2.16 COM 1~4		2.17 CN1																																																																																																																																																																																					
COM1~ COM4 output port		PCI 104 slot signal from M/B																																																																																																																																																																																					
	<table><tr><th>Pin</th><th>RS-232</th><th>RS-422</th><th>RS-485</th></tr><tr><td>1</td><td>DCD_4</td><td>N/C</td><td>N/C</td></tr><tr><td>2</td><td>DSR_4</td><td>Rx-_4</td><td>N/C</td></tr><tr><td>3</td><td>RXD_4</td><td>Rx+_4</td><td>N/C</td></tr><tr><td>4</td><td>RTS_4</td><td>N/C</td><td>N/C</td></tr><tr><td>5</td><td>TXD_4</td><td>N/C</td><td>N/C</td></tr><tr><td>6</td><td>CTS_4</td><td>Tx-_4</td><td>Data-_4</td></tr><tr><td>7</td><td>DTR_4</td><td>N/C</td><td>N/C</td></tr><tr><td>8</td><td>RI_4</td><td>Tx+_4</td><td>Data+_4</td></tr><tr><td>9</td><td>GND</td><td>GND</td><td>GND</td></tr><tr><td>10</td><td>+5V</td><td>+5V</td><td>+5V</td></tr><tr><td>11</td><td>DCD_3</td><td>N/C</td><td>N/C</td></tr><tr><td>12</td><td>DSR_3</td><td>Rx-_3</td><td>N/C</td></tr><tr><td>13</td><td>RXD_3</td><td>Rx+_3</td><td>N/C</td></tr><tr><td>14</td><td>RTS_3</td><td>N/C</td><td>N/C</td></tr><tr><td>15</td><td>TXD_3</td><td>N/C</td><td>N/C</td></tr><tr><td>16</td><td>CTS_3</td><td>Tx-_3</td><td>Data-_3</td></tr><tr><td>17</td><td>DTR_3</td><td>N/C</td><td>N/C</td></tr><tr><td>18</td><td>RI_3</td><td>Tx+_3</td><td>Data+_3</td></tr><tr><td>19</td><td>GND</td><td>GND</td><td>GND</td></tr><tr><td>20</td><td>+5V</td><td>+5V</td><td>+5V</td></tr><tr><td>21</td><td>DCD_2</td><td>N/C</td><td>N/C</td></tr><tr><td>22</td><td>DSR_2</td><td>Rx-_2</td><td>N/C</td></tr><tr><td>23</td><td>RXD_2</td><td>Rx+_2</td><td>N/C</td></tr><tr><td>24</td><td>RTS_2</td><td>N/C</td><td>N/C</td></tr><tr><td>25</td><td>TXD_2</td><td>N/C</td><td>N/C</td></tr><tr><td>26</td><td>CTS_2</td><td>Tx-_2</td><td>Data-_2</td></tr><tr><td>27</td><td>DTR_2</td><td>N/C</td><td>N/C</td></tr><tr><td>28</td><td>RI_2</td><td>Tx+_2</td><td>Data+_2</td></tr><tr><td>29</td><td>GND</td><td>GND</td><td>GND</td></tr><tr><td>30</td><td>+5V</td><td>+5V</td><td>+5V</td></tr><tr><td>31</td><td>N/C</td><td>N/C</td><td>N/C</td></tr><tr><td>32</td><td>N/C</td><td>N/C</td><td>N/C</td></tr><tr><td>33</td><td>DCD_1</td><td>N/C</td><td>N/C</td></tr><tr><td>34</td><td>DSR_1</td><td>Rx-_1</td><td>N/C</td></tr><tr><td>35</td><td>RXD_1</td><td>Rx+_1</td><td>N/C</td></tr><tr><td>36</td><td>RTS_1</td><td>N/C</td><td>N/C</td></tr><tr><td>37</td><td>TXD_1</td><td>N/C</td><td>N/C</td></tr><tr><td>38</td><td>CTS_1</td><td>Tx-_1</td><td>Data-_1</td></tr><tr><td>39</td><td>DTR_1</td><td>N/C</td><td>N/C</td></tr><tr><td>40</td><td>RI_1</td><td>Tx+_1</td><td>Data+_1</td></tr><tr><td>41</td><td>GND</td><td>GND</td><td>GND</td></tr><tr><td>42</td><td>+5V</td><td>+5V</td><td>+5V</td></tr><tr><td>43</td><td>N/C</td><td>N/C</td><td>N/C</td></tr><tr><td>44</td><td>N/C</td><td>N/C</td><td>N/C</td></tr></table>	Pin	RS-232	RS-422	RS-485	1	DCD_4	N/C	N/C	2	DSR_4	Rx-_4	N/C	3	RXD_4	Rx+_4	N/C	4	RTS_4	N/C	N/C	5	TXD_4	N/C	N/C	6	CTS_4	Tx-_4	Data-_4	7	DTR_4	N/C	N/C	8	RI_4	Tx+_4	Data+_4	9	GND	GND	GND	10	+5V	+5V	+5V	11	DCD_3	N/C	N/C	12	DSR_3	Rx-_3	N/C	13	RXD_3	Rx+_3	N/C	14	RTS_3	N/C	N/C	15	TXD_3	N/C	N/C	16	CTS_3	Tx-_3	Data-_3	17	DTR_3	N/C	N/C	18	RI_3	Tx+_3	Data+_3	19	GND	GND	GND	20	+5V	+5V	+5V	21	DCD_2	N/C	N/C	22	DSR_2	Rx-_2	N/C	23	RXD_2	Rx+_2	N/C	24	RTS_2	N/C	N/C	25	TXD_2	N/C	N/C	26	CTS_2	Tx-_2	Data-_2	27	DTR_2	N/C	N/C	28	RI_2	Tx+_2	Data+_2	29	GND	GND	GND	30	+5V	+5V	+5V	31	N/C	N/C	N/C	32	N/C	N/C	N/C	33	DCD_1	N/C	N/C	34	DSR_1	Rx-_1	N/C	35	RXD_1	Rx+_1	N/C	36	RTS_1	N/C	N/C	37	TXD_1	N/C	N/C	38	CTS_1	Tx-_1	Data-_1	39	DTR_1	N/C	N/C	40	RI_1	Tx+_1	Data+_1	41	GND	GND	GND	42	+5V	+5V	+5V	43	N/C	N/C	N/C	44	N/C	N/C	N/C		
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### 3 OXuPCI954 Drive Installation Guide

When you install the OXuPCI954 drivers in AR-B104B, you only need to install driver follow step1 to step9. If you want to adjust the COM port properties, you can follow step10 to step13 to adjust the COM port properties.

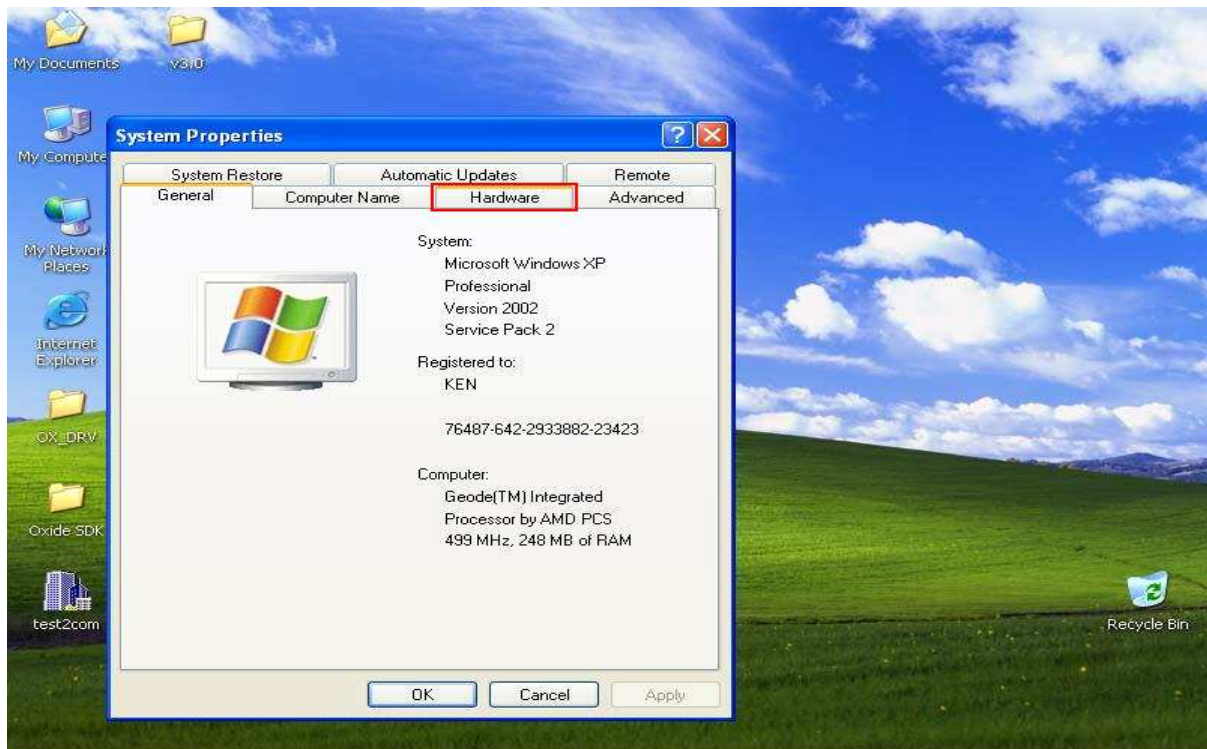
#### Installation Step :

1. Click the right button of mouse on “My Computer” icon, the screen will show the function list then select the “Properties” function.

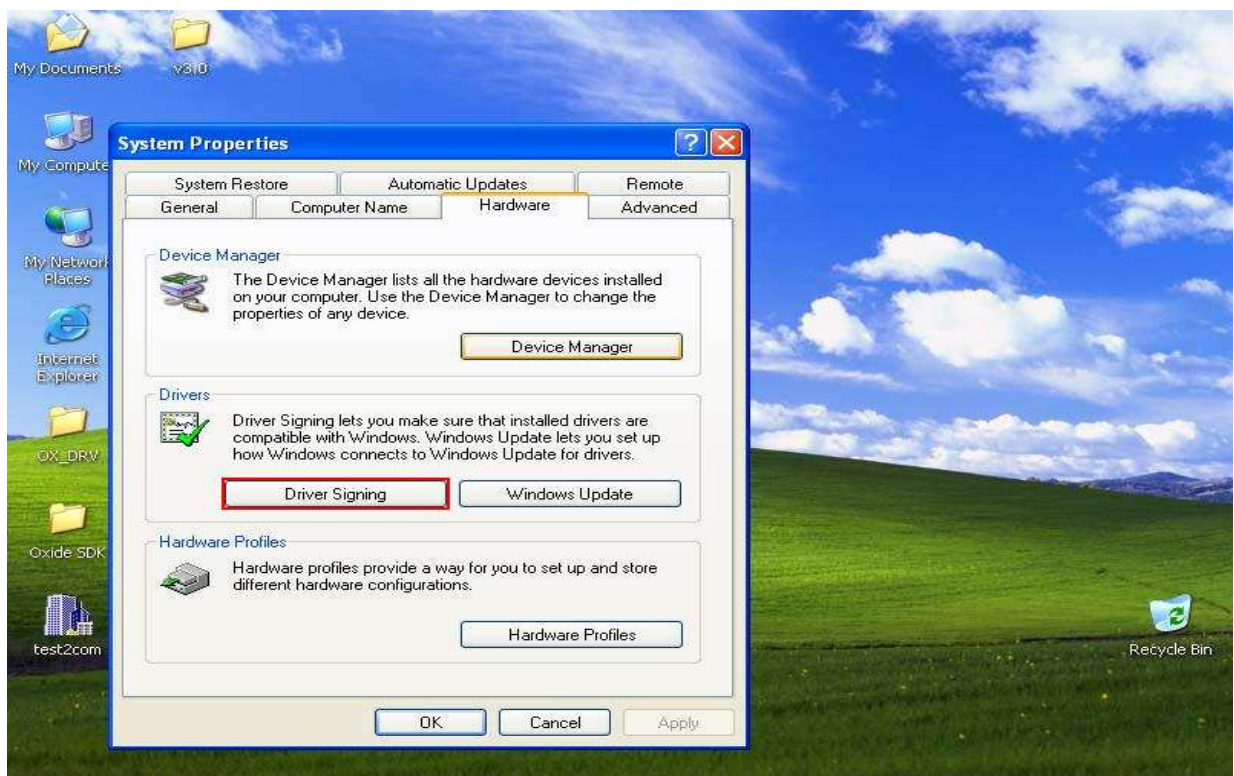




2. When “System Properties” appear on screen, select “Hardware” item.

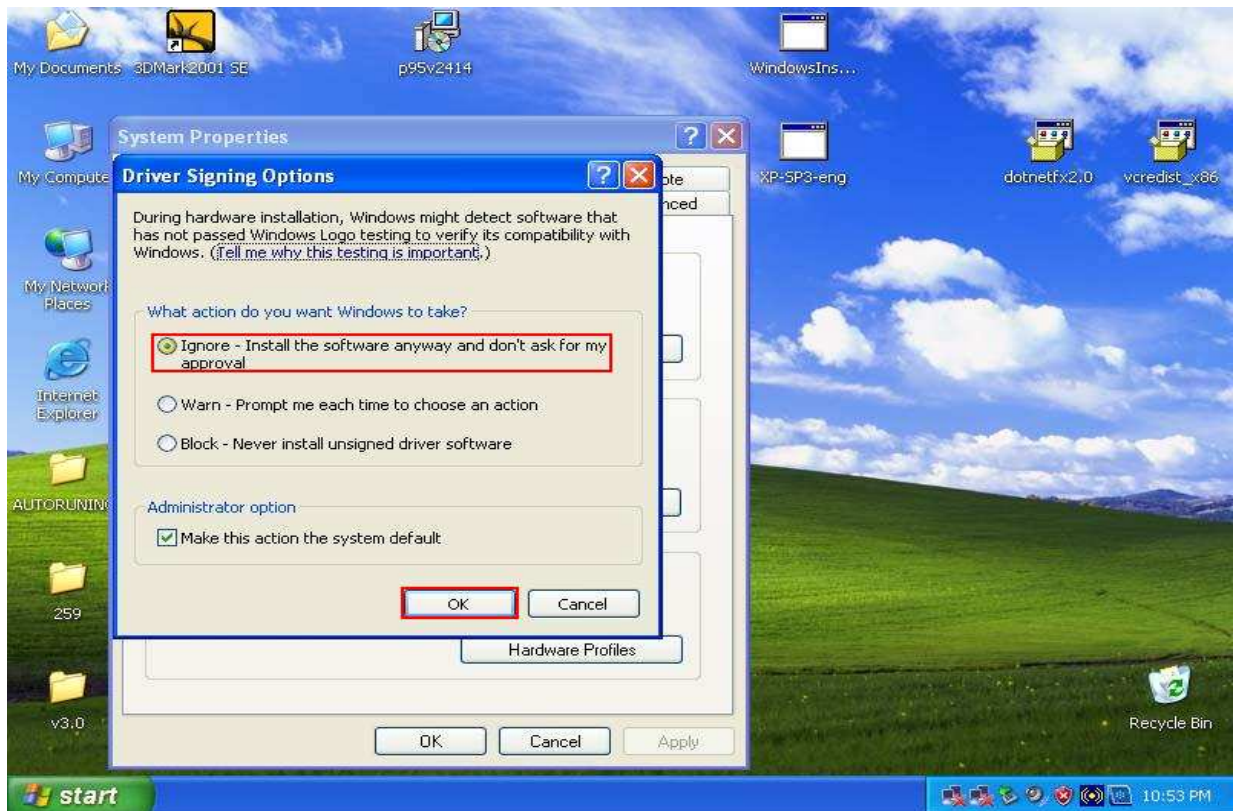


3. In “Hardware” Setting, select “Driver Signing” item, “Driver Signing Options” screen will appear.

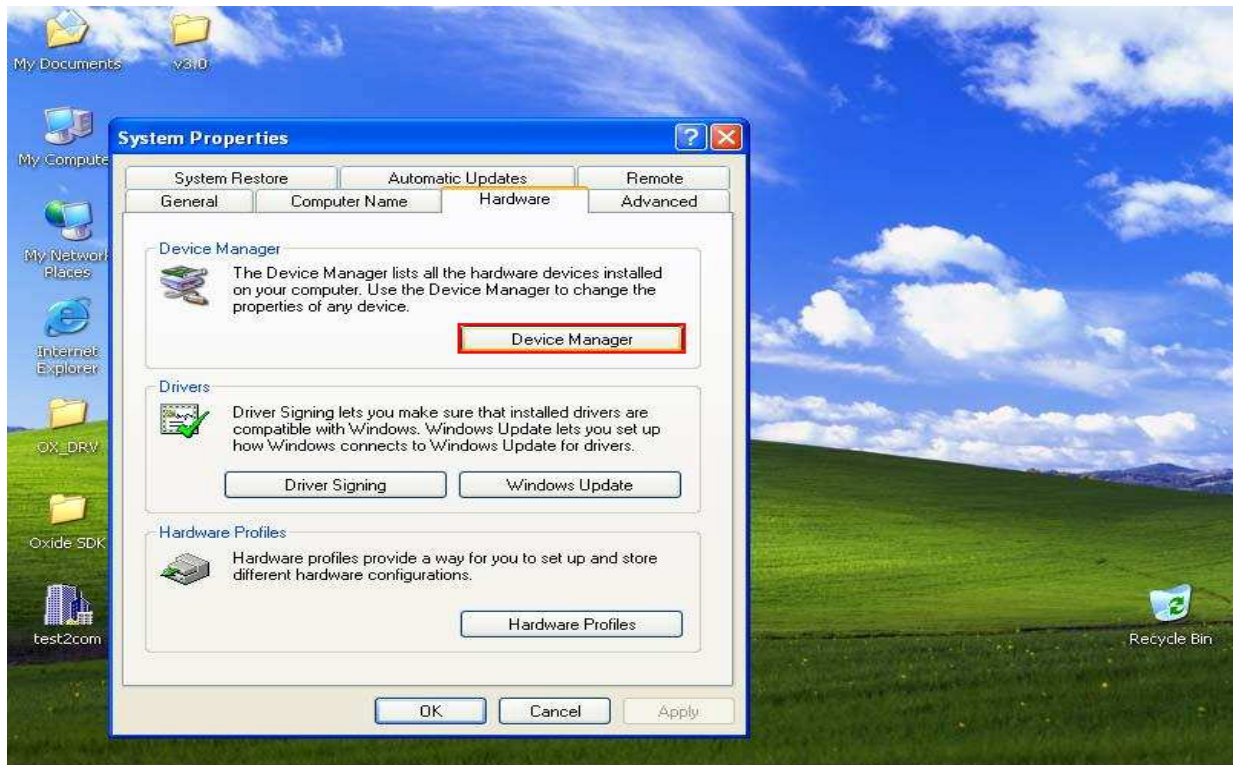




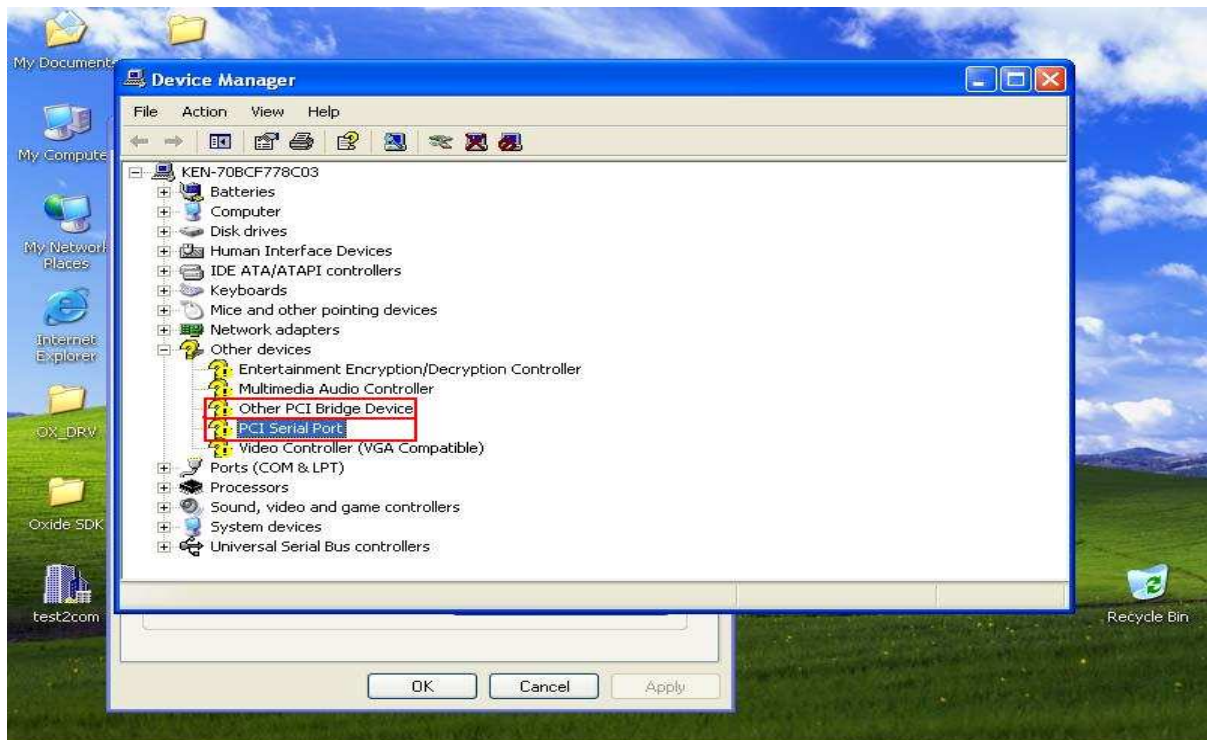
4. Select “Ignore” item, select “OK”.



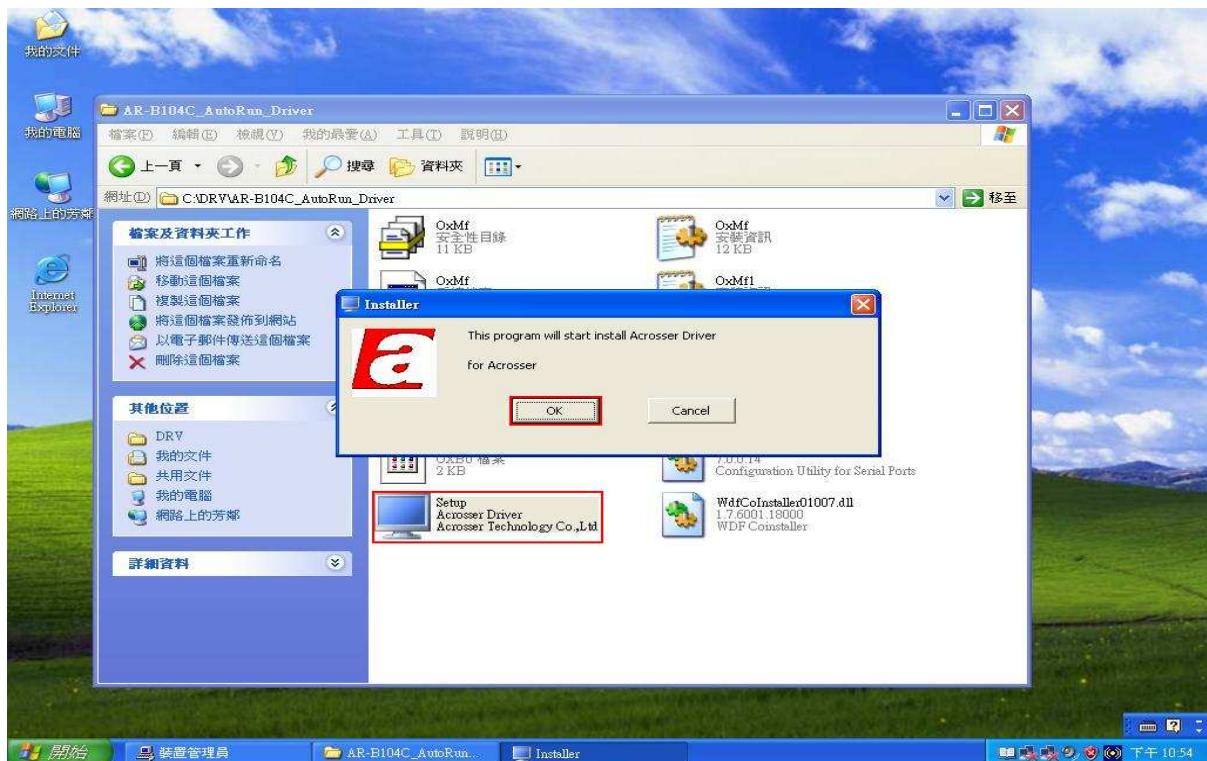
5. In “Hardware” Setting, select “Device Manager”



6. You must confirm “? PCI Serial Port” and “? Other PCI Bridge Device” device exist in system devices list (When you use AR-B104B/4P, only “? PCI Serial Port” exists).

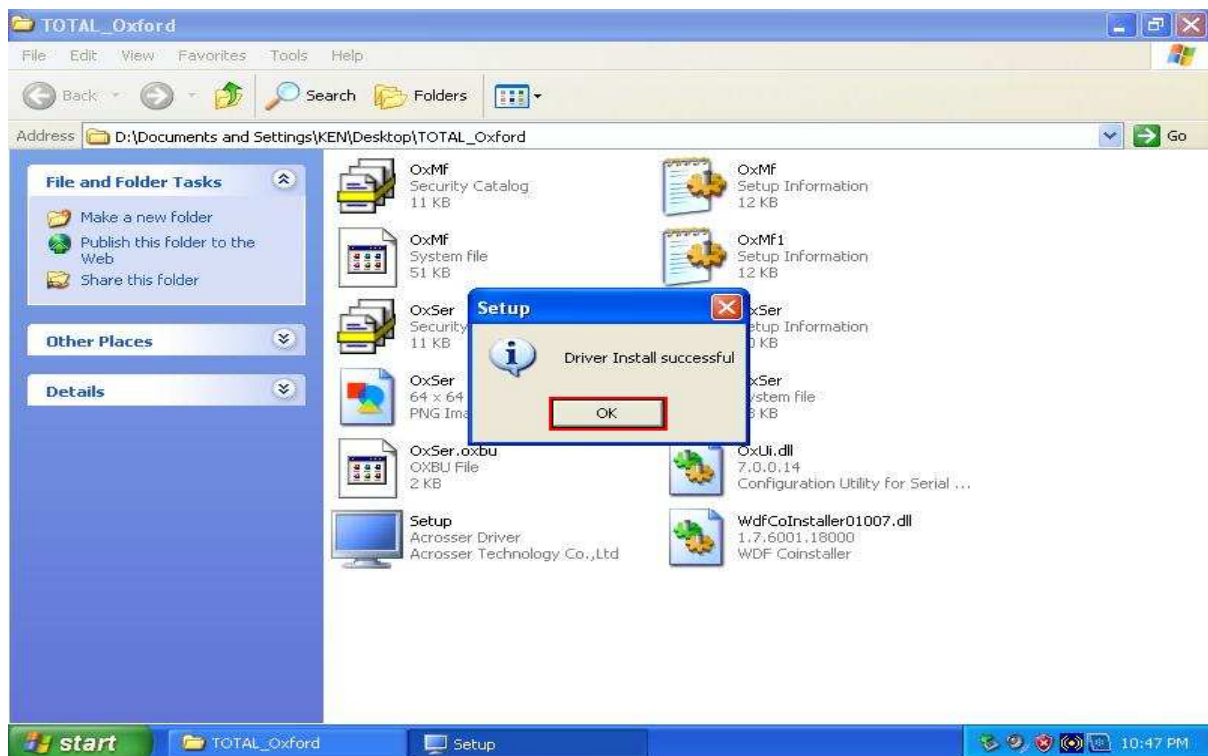


7. Now, execute the installation program of driver, then select “OK”, the OXuPCI954 driver will be auto installation.

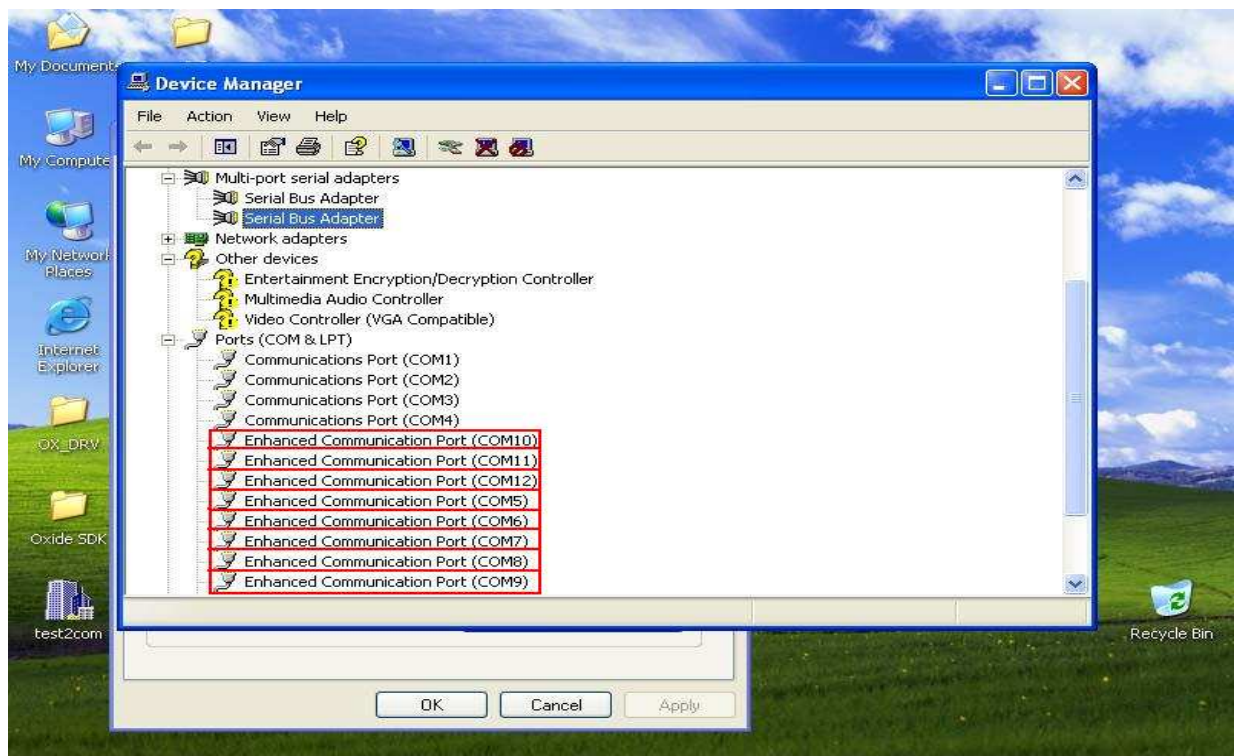




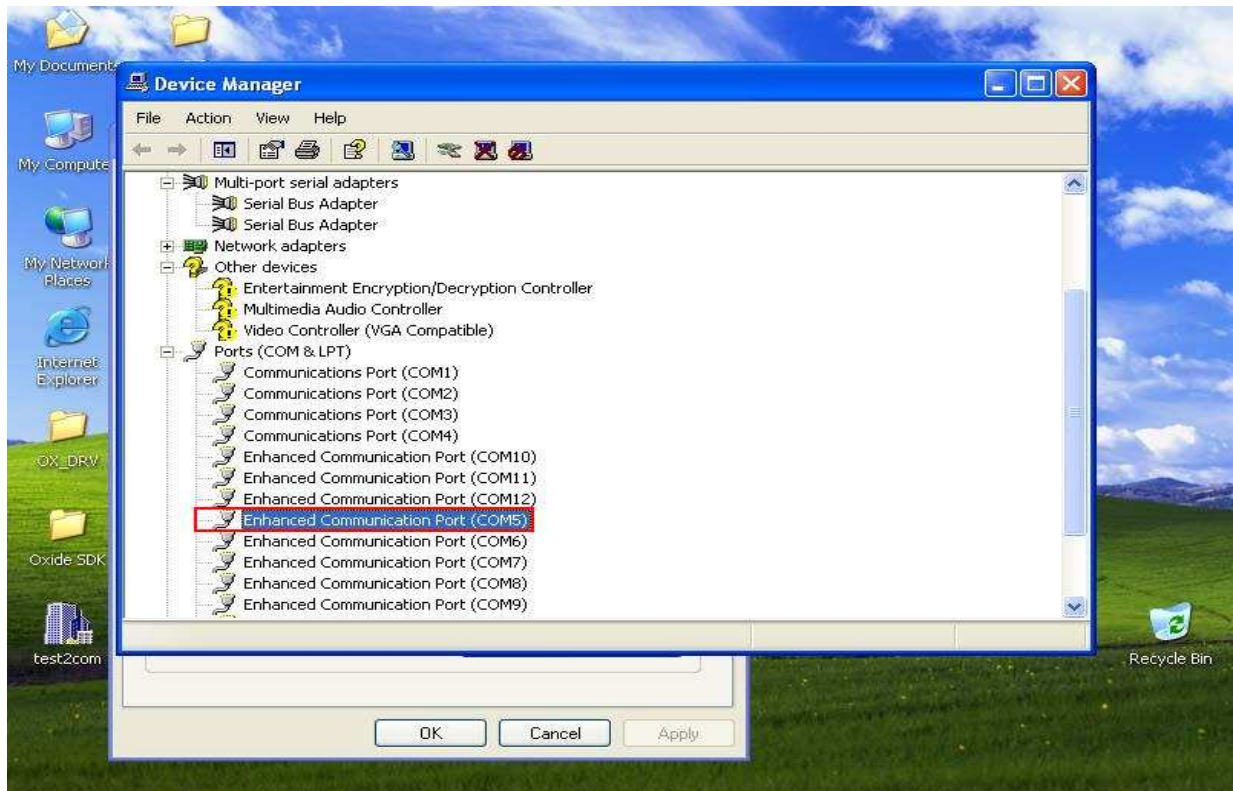
8. When the auto installation driver install finish, select “OK”.



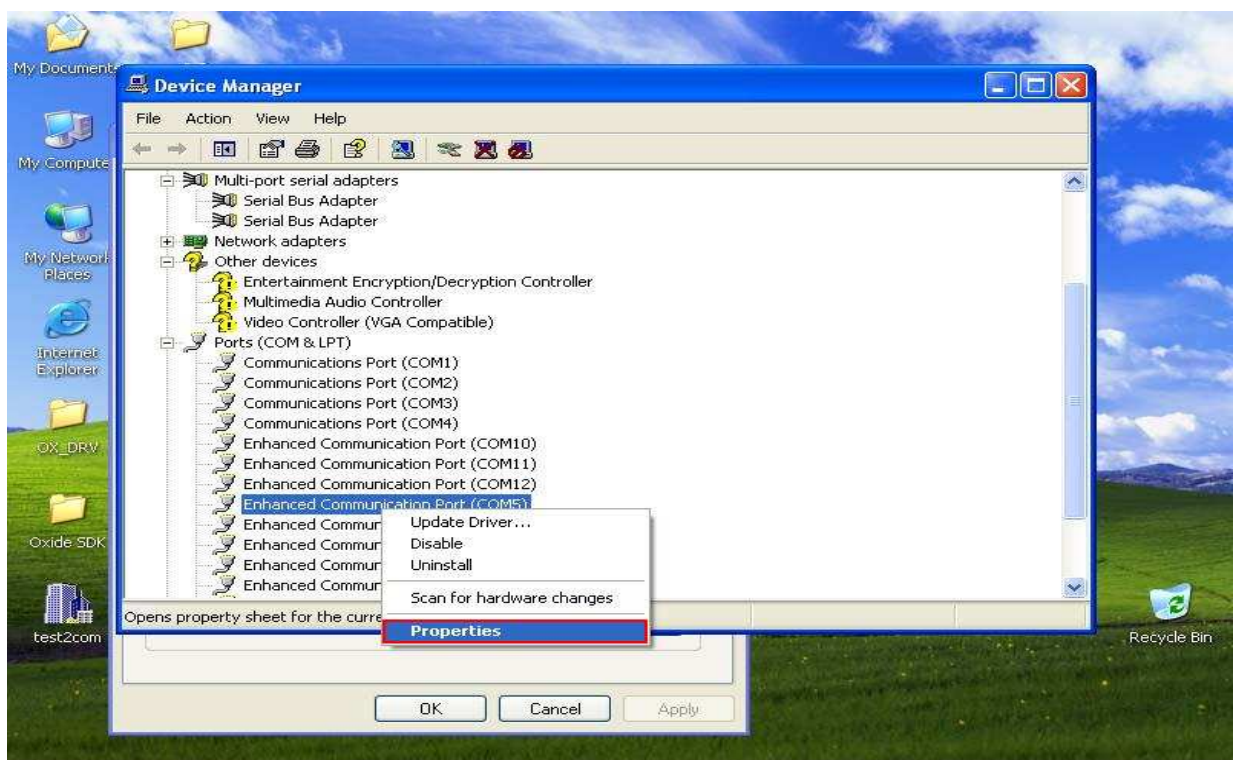
9. You can see 8 “Enhanced Communication Port” be added (When you use AR-B104B/4P, only 4 “Enhanced Communication Port” exist).



10. If you want adjust the COM port setting, click the right button of mouse on the COM port icon.

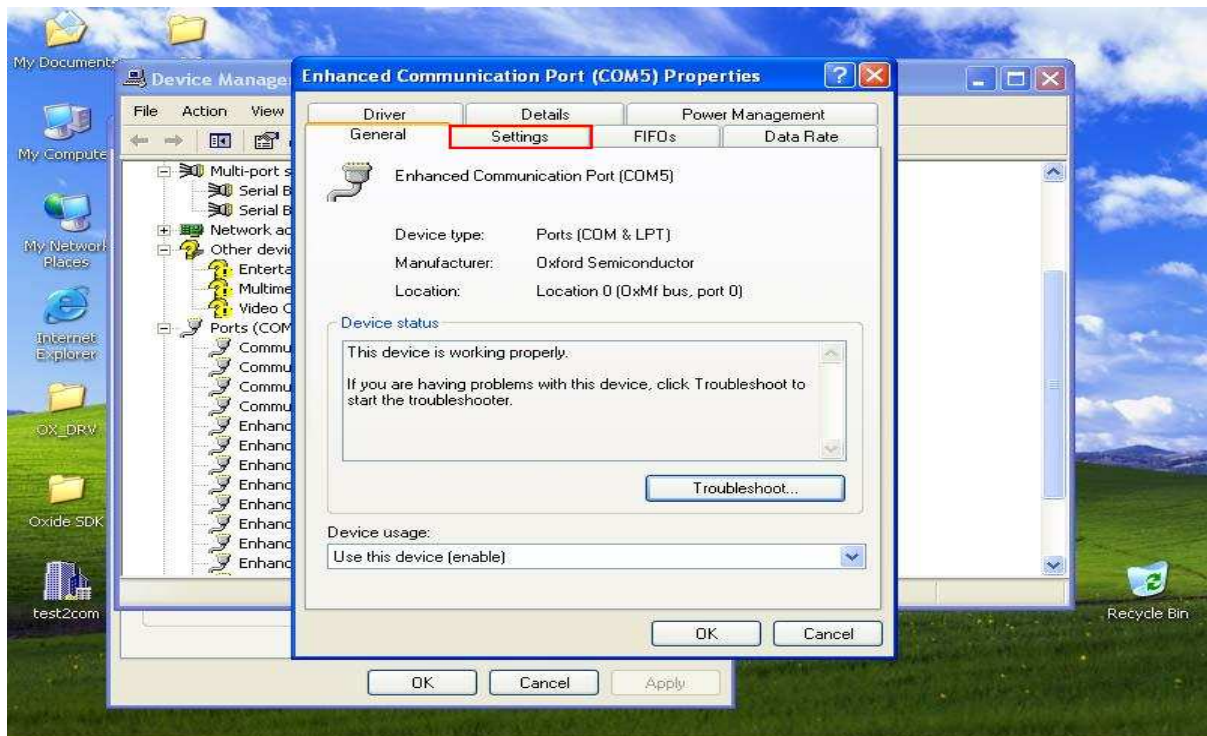


11. Select the "Properties" function.





12. When the COM Port icon Properties appear on screen, select “Settings” item.



13. When the properties of the COM Port icon appear on screen, select the item which you want to change, such as the sequence of the COM Port, if you setup the COM Port finish, select “OK”, the setting will be changed.

